



Data Sources for Human Behavior

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14. ABSTRACT This presentation will give the audience an overview of sources of data for understanding human behavior for M&S efforts. This presentation falls under the presentation top are of "Socio-cultural data acquisition, extraction, and management." Open sources of data will be discussed, as well as those found in academic settings, federally supported public archives of data, peer-reviewed journals as well as appropriate search terms to look for data sources will be used. The reliability and utility of different data sources or media will be compared, for example the merits of archived footage, laboratory methods, self-report, observation, etc. The utility and limitations of relying solely on Subject Matter Experts will also be discussed. The goal of the presentation is to give those without a social science background an overview of the methods and procedures available to find data and evaluate the relative utility, validity, and reliability of that data for M&S efforts.					
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Keywords and Subject Headings



Key Concepts

functional magnetic resonance imaging, neural substrates,
Subject Headings

*Attachment Behavior

*Brain

*Electrical Activity

*Neural Pathways



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How to roughly judge utility



- State of the art review paper of peer review articles
- Peer-reviewed articles
- Books based on review of above
- Chapters based on review of above
- Proceedings of conferences
- Tech reports with DATA and analyses
- Expert qualitative analyses
- First-hand accounts/observations
- Speculation/White Papers/Theses without data
- Wiki (no, no, no)



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Subject Matter Experts



- Why should I wade through all this research when I can just ask a Subject Matter Expert (SME)?



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MISCONCEPTIONS



- Research into human behavior has all been done
- Answers to M&S questions are already known by social scientists, all you need to do is
 - Ask the right person
 - Find the right article
- Therefore, the needed algorithm has already been derived

ALL WRONG



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Limitations of SME's for M&S



- Sometimes the Subject Matter information just doesn't exist, so it's impossible to find a Subject Matter Expert
- An SME can give well informed experienced opinion and observations, but mostly likely not hard data or algorithms
- No SME can take the place of systematic experimentation or investigation
 - Cannot provide concrete measures, numerics, algorithms



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BASIC RESEARCH REQUIRED



- Modeling and Simulation of human social cultural behavior **REQUIRES** investment in BASIC research on human social cultural behavior



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The Search for the Algorithm: Less Costly Data Sources



Public Archives of Survey/Census Data

Strengths

- Nice clean data ready for analyses
- Usually large data sets

Weaknesses

- Need to search for relevant metrics measures
- Data may not exist for the question



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Feature:

[Online Learning Center \(OLC\)](#)



The OLC is the result of discussions with teaching faculty about using data in their classrooms and the challenges such undertakings can entail. Instructors directed ICPSR to develop tools that would: 1) quickly locate relevant data that



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The Search for the Algorithm: Less Costly Data Sources



Historical Analysis of Public Records

Strengths

- Externally valid
- Real events

Weaknesses

- Need to search for relevant metrics measures
- Data may not exist for the question



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The Search for the Algorithm: Less Costly Data Sources



Questionnaire/Interview Methods

Strengths

- Relatively low cost
- Relative ease of conducting research

Weaknesses

- Question construction may not be simple
- Answers subject to memory deterioration, bias
- Differences between talking about a behavior and actually doing a behavior

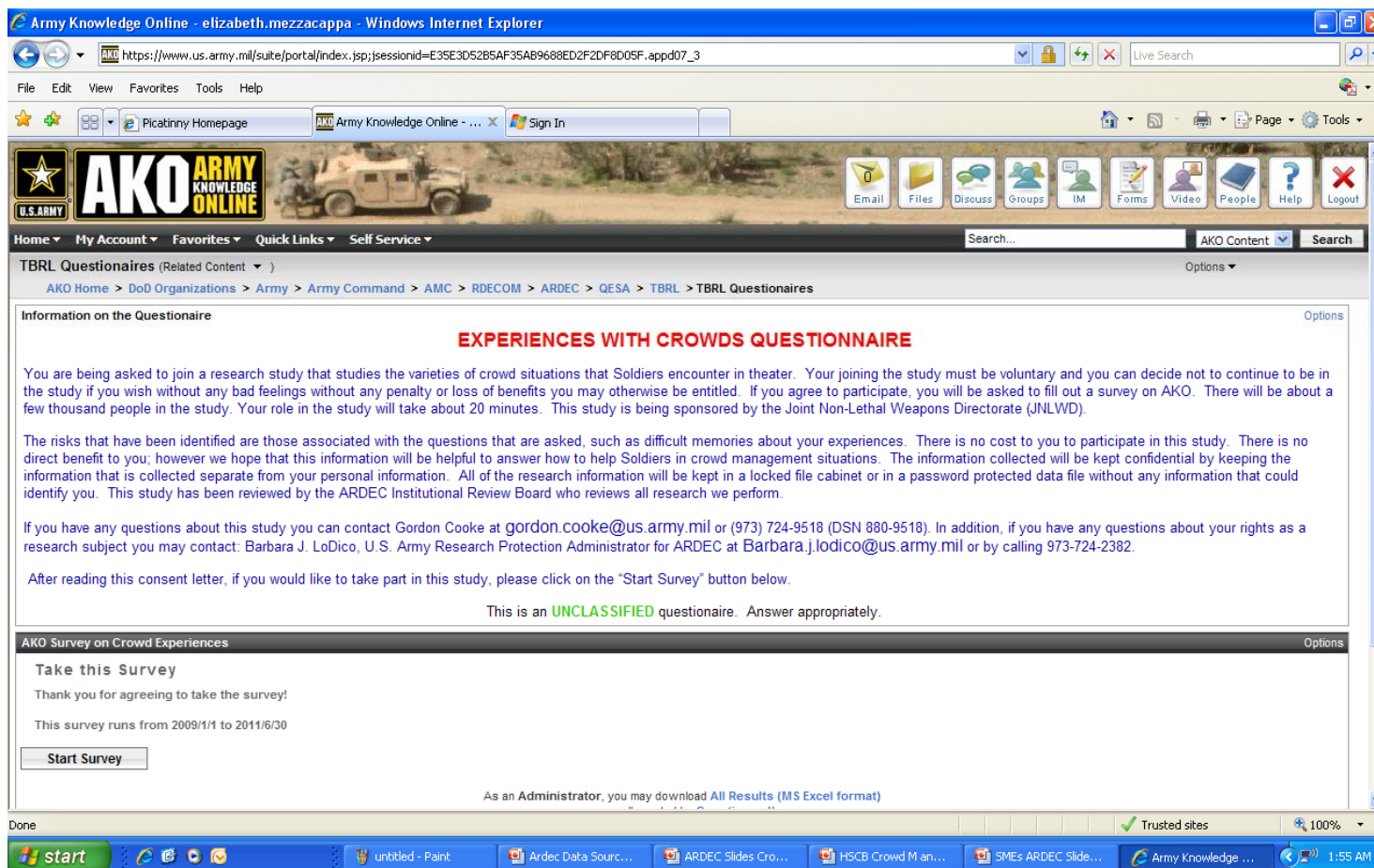


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Internet Survey on Crowd Experiences



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The Search for the Algorithm: Less Costly Data Sources



Analysis of Videorecordings

- Strengths
 - Relatively easy to buy data
- Weaknesses
 - Biased
 - Camera view limited
 - Coding



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The Search for the Algorithm: Richer Data Sources



Real-time Observation/Interview

Strengths

- Great external validity
- Gain deeper insight into phenomena

Weaknesses

- Personnel intensive
- Researchers need to be highly trained
- Relevant event may be rare



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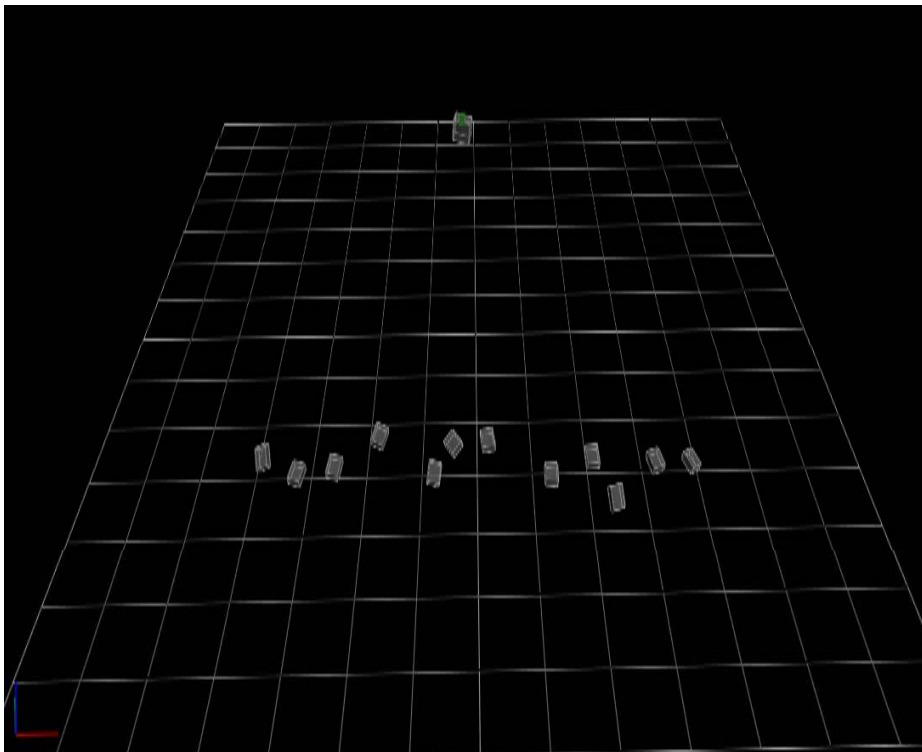
Laboratory Experiments

Strengths

- Control over variables
- Reliable
- Data rich

Weaknesses

- Resource and Personnel Intensive
- External Validity need to be established





Experimentation for M&S



- No “Magic Bullet” experiment that answers all questions
- Need disciplined programmatic research
- Use more than method of research
- Have collaborations among researchers with different perspectives and approaches



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Questions?



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